

**Amendment To The Claims:**

Claims 1-3 (Canceled)

4. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:  
allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and  
for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;  
wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and  
~~The method of claim 1,~~

wherein for at least one of the channels, when a next update of the allocated transmission bit rate can be implemented, following an implementation delay, before a decode time of a next picture, a maximum limit is set on the allocated transmission bit rate at a current time (CT) in proportion to a fullness of the modeled decoder buffer at a time (CT+delay), and in inverse proportion to a time period between (CT+delay) and the decode time.

5. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:

allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and

for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;

wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and  
~~The method of claim 1,~~

wherein for at least one of the channels, when a next update of the allocated transmission bit rate can not be implemented, following an implementation delay, before a decode time of a next picture, a maximum limit is set on the allocated transmission bit rate at a current time (CT) in proportion to a fullness of the modeled decoder buffer at a time (CT+delay), and in inverse proportion to a time period between (CT+delay) and a decode time of a picture that follows said next picture.

6. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:

allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and

for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;

wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and  
~~The method of claim 1,~~

wherein for at least one of the channels, when a next update of the allocated transmission bit rate can be implemented, following an implementation delay, before a decode time of the current picture, a minimum limit is set on the allocated transmission bit rate at a current time (CT) in proportion to a number of remaining bits of the current picture to transmit at a time (CT+delay), and in inverse proportion to a time period between (CT+delay) and the decode time.

7. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:

allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and

for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;

wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and,  
~~The method of claim 1,~~ comprising the further step of:

for at least one of the channels, determining whether a current allocated transmission bit rate is sufficient to transmit a number of remaining bits of the current picture in a time period

between a current time and a decode time of the current picture, and, if so, maintaining the current allocated transmission bit rate in a next update cycle thereof.

8. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:

allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and

for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;

wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and, ~~The method of claim 1,~~ comprising the further step of:

for at least one of the channels, forcing the allocated transmission bit rate to a maximum value in a next update cycle thereof when a current allocated transmission bit rate is not sufficient to transmit a number of remaining bits of the current picture in a time period between a current time and a decode time of the current picture.

9. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:

allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and

for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;

wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and  
~~The method of claim 1,~~

wherein for at least one of the channels, when a next update of the allocated transmission bit rate can be implemented, following an implementation delay, before a decode time of a next picture, a maximum limit is set on the allocated transmission bit rate at a current time to avoid an overflow of the modeled decoder buffer at the decode time.

10. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:

allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and

for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;

wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and  
~~The method of claim 1,~~

wherein for at least one of the channels, when a next update of the allocated transmission bit rate can not be implemented, following an implementation delay, before a decode time of a next picture, a maximum limit is set on the allocated transmission bit rate at a current time to avoid an overflow of the modeled decoder buffer at a decode time of a picture that follows said next picture.

11. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:

allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and

for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;

wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and  
~~The method of claim 1,~~

wherein: for at least one of the channels, when a next update of the allocated transmission bit rate can be implemented, following an implementation delay, before a decode time of the current picture, a minimum limit is set on the allocated transmission bit rate at a current time such that the current picture is completely transmitted before the decode time.

12. (Currently amended) A method for processing a plurality of channels in a statistical multiplexer, comprising the steps of:  
allocating an encoding bit rate for coding a current picture of each channel according to a bit rate need parameter thereof; and  
for each channel, allocating a transmission bit rate for transmitting the current picture after encoding thereof, and providing a modeled decoder buffer that receives transmitted pictures therefrom;  
wherein, for each channel, the transmission bit rate is based on the channel's encoding bit rate, and is allocated following a system delay that follows the allocated encoding bit rate, to minimize a rate mismatch between an input and an output of the modeled decoder buffer, and  
~~The method of claim 1,~~

wherein: for at least one of the channels, when a next update of the allocated transmission bit rate can not be implemented, following an implementation delay, before a decode time of the current picture, a minimum limit on the allocated transmission bit rate at a current time is set to a maximum value to mitigate a potential underflow of the modeled decoder buffer.

13. (Canceled)